

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
ARTESIA DISTRICT
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

RECEIVED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015- 43305		2 Pool Code 97565		3 Pool Name N Seven Rivers; Glorieta Yeso					
4 Property Code		5 Property Name BONE YARD 11 FEE						6 Well Number 12H	
7 GRID NO. 229137		8 Operator Name COG OPERATING, LLC.						9 Elevation 3398'	
10 Surface Location									
UL or lot no.: N	Section 2	Township 20S	Range 25E	Lot Idn	Feet from the 170	North/South line SOUTH	Feet From the 1460	East/West line WEST	County EDDY
11 Bottom Hole Location If Different From Surface									
UL or lot no. N	Section 11	Township 20S	Range 25E	Lot Idn	Feet from the 330	North/South line SOUTH	Feet from the 1660	East/West line WEST	County EDDY
12 Dedicated Acres 160		13 Joint or Infill		14 Consolidation Code		15 Order No.			

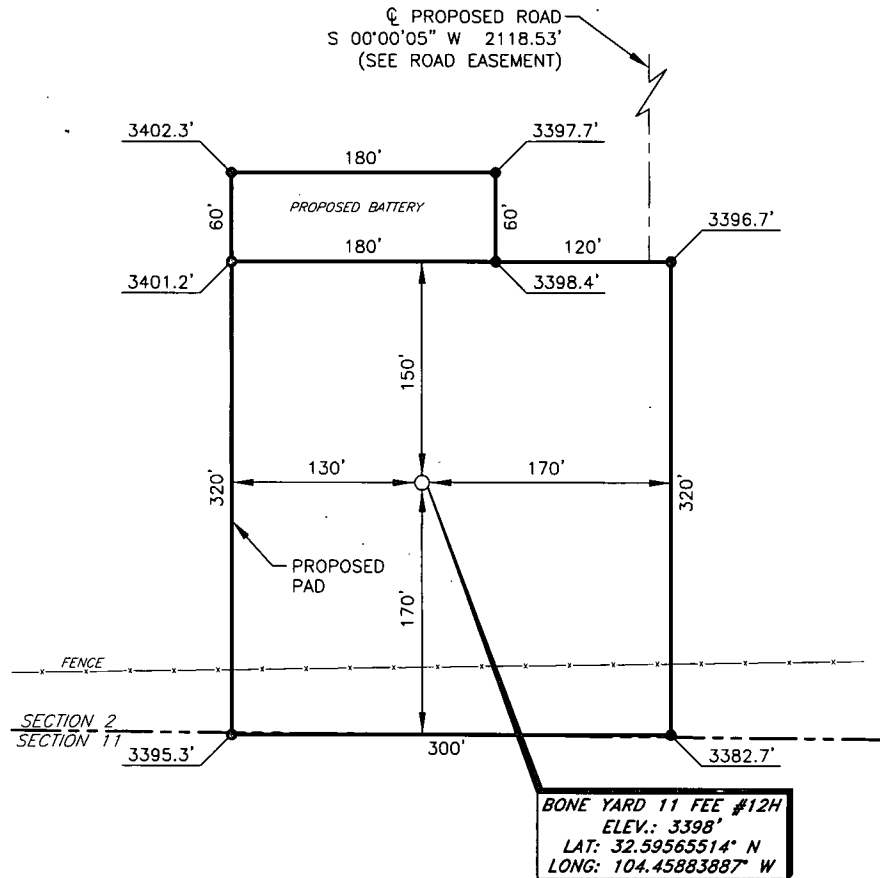
No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

	GEODETIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 580433.8 - E 461347.5 LAT: 32.59565514° N LONG: 104.45883887° W BOTTOM HOLE N 575246.5 - E 461505.4	CORNER DATA NAD 27 GRID - NM EAST A: FOUND BRASS CAP "1947" N 574906.7 - E 459843.2 B: FOUND BRASS CAP "1947" N 577592.0 - E 459864.9 C: FOUND BRASS CAP "1947" N 580276.9 - E 459887.3 D: FOUND BRASS CAP "1947" N 582882.5 - E 459896.7 E: FOUND BRASS CAP "1947" N 585504.1 - E 459905.9 F: FOUND BRASS CAP "1947" N 585511.7 - E 462548.4 G: FOUND BRASS CAP "1947" N 585520.8 - E 465190.9 H: FOUND BRASS CAP "1947" N 582874.9 - E 465184.7 I: FOUND BRASS CAP "1947" N 580229.1 - E 465177.8 J: FOUND BRASS CAP "1947" N 577584.2 - E 465171.8 K: CALCULATED CORNER N 574939.6 - E 465164.4 L: FOUND BRASS CAP "1947" N 574922.5 - E 462503.3 M: FOUND BRASS CAP "1947" N 580253.1 - E 462532.6 1: CALCULATED POINT N 581572.8 - E 461214.3 2: CALCULATED POINT N 581565.9 - E 462536.5 3: CALCULATED POINT N 574914.6 - E 461173.3	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: <i>Kelly J. Holly</i> Date: 8-13-15 Printed Name: Kelly J. Holly E-mail Address: kholly@concho.com	18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 8-5-2015 Date of Survey Signature and Seal of Professional Surveyor: <i>Robert M. Howett</i> 19680 Certificate Number
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RRC - Firm No.: TX 10193838 NM 4655451 - Job No.: LS1508437

8/16/15
COP

COG OPERATING, LLC
BONE YARD 11 FEE #12H
(170' FSL & 1460' FWL)
SECTION 2, T20S, R25E
N. M. P. M., EDDY CO., NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-23 (Rock Daisy Rd.) and U.S. Hwy 285;
Go West on CR-23 approx. 3.0 miles to a lease road on the left;
Turn left and go South approx. 1.5 miles to a lease road on the left;
Turn left and go East approx. 0.2 miles to a lease road on the right;
Turn right and go Southeast approx. 378 feet to a proposed road on the right;
Turn right and go South approx. 0.4 miles.
Location is on the right.

SCALE: 1" = 100'
0 50 100
BEARINGS ARE
NAD 27 GRID - NM EAST
DISTANCES ARE
GROUND.

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.:	LS1508437	
DWG. NO.:	1508437PAD	

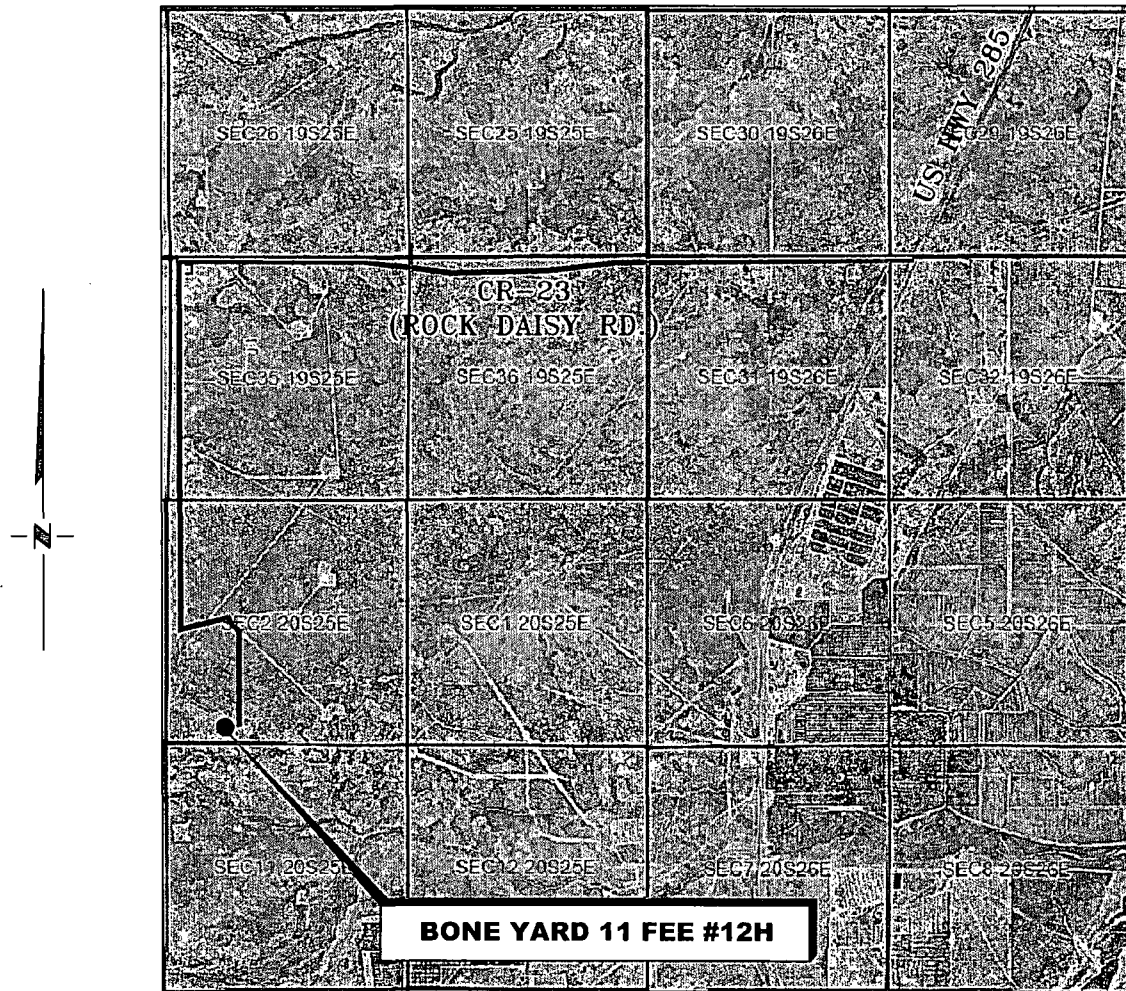
RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 8-5-2015
SURVEYED BY: GB
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1

VICINITY MAP

NOT TO SCALE



*SECTION 2, TWP. 20 SOUTH, RGE. 25 EAST,
N. M. P. M., EDDY CO., NEW MEXICO*

OPERATOR: COG Operating, LLC
LEASE: Bone Yard 11 Fee
WELL NO.: 12H

LOCATION: 170' FSL & 1460' FWL
ELEVATION: 3398'

Firm No.: TX 10193838 NM 4655451

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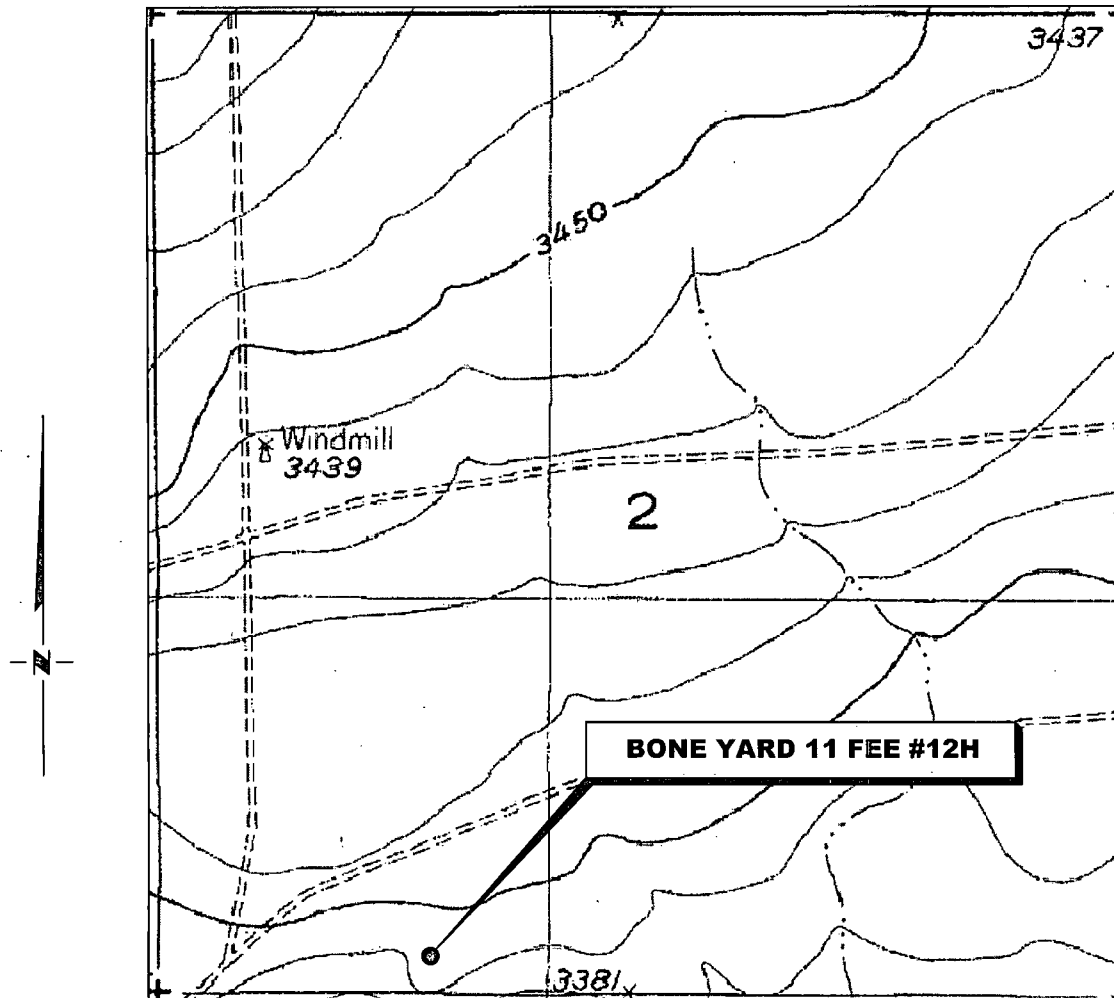
NO.	REVISION	DATE
JOB NO.:	LS15084374	
DWG. NO.:	1507437VM	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: NTS
DATE: 8-5-2015
SURVEYED BY: GB
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1

LOCATION VERIFICATION MAP



SECTION 2, TWP. 20 SOUTH, RGE. 25 EAST,
N. M. P. M., EDDY CO., NEW MEXICO

OPERATOR: COG Operating, LLC
LEASE: Bone Yard 11 Fee
WELL NO.: 12H
ELEVATION: 3398'

LOCATION: 170' FSL & 1460' FWL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Seven Rivers, NM (1954)

Firm No.: TX 10193838 NM 4655451

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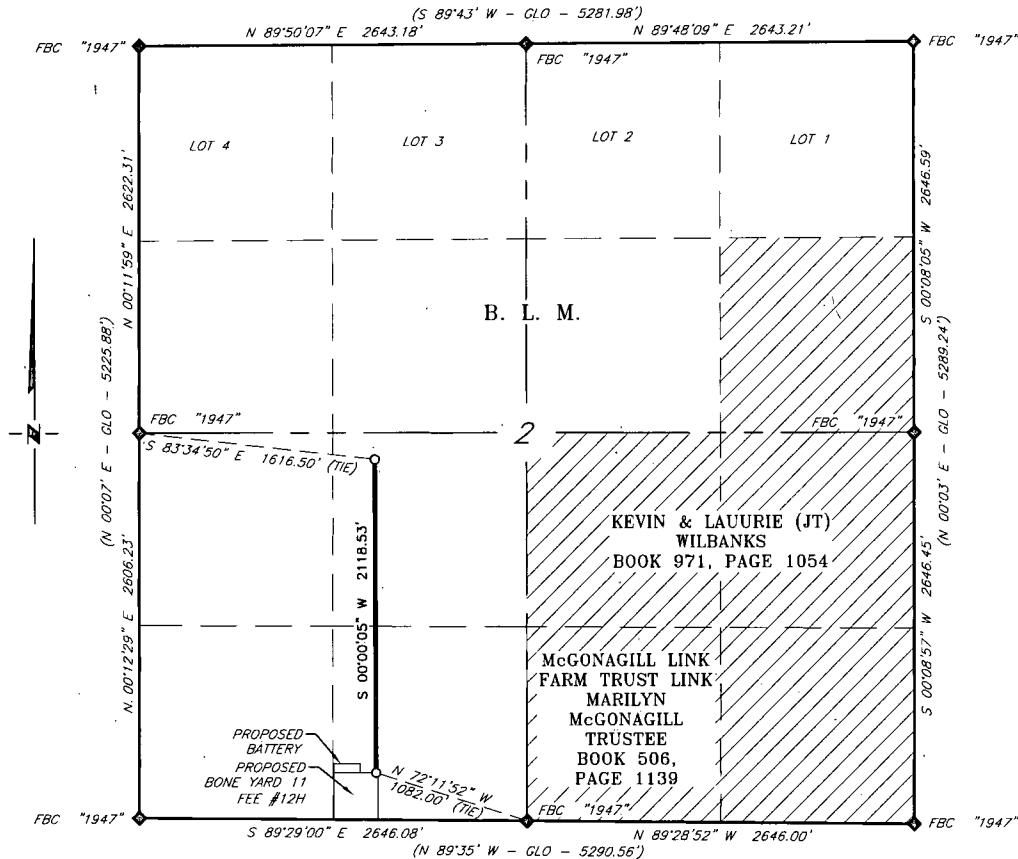
NO.	REVISION	DATE
JOB NO.:	LS1508437	
DWG. NO.:	1508437LVM	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1"=1000'
DATE: 8-5-2015
SURVEYED BY: GB
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1

COG OPERATING, LLC
PROPOSED ACCESS ROAD FOR
THE BONE YARD 11 FEE #12H
SECTION 2, T20S, R25E,
N. M. P. M., EDDY CO., NEW MEXICO



DESCRIPTION

A strip of land 30 feet wide, being 2,118.53 feet or 128.396 rods in length, lying in Section 2, Township 20 South, Range 25 East, N. M. P. M., Eddy County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across B. L. M. land:

BEGINNING at Engr. Sta. 0+00, a point in the Southwest quarter of Section 2, which bears S 83°34'50" E, 1,616.50 feet from a brass cap, stamped "1947", found for the West quarter corner of Section 2;

Thence S 00°00'05" W, 2,118.53 feet, to Engr. Sta. 21+18.53, the End of Survey, a point in the Southwest quarter of Section 2, which bears N 72°11'52" W, 1,082.00 feet from a brass cap, stamped "1947", found for the South quarter corner of Section 2.

Said strip of land contains 1.459 acres, more or less and is allocated by forties as follows:

NE 1/4 SW 1/4	68.533	Rods	0.779	Acres
SE 1/4 SW 1/4	59.863	Rods	0.680	Acres

SCALE: 1" = 1000'
 0 500' 1000'

BEARINGS ARE GRID NAD 27
 NM EAST
 DISTANCES ARE HORIZ. GROUND.

LEGEND

() RECORD DATA - GLO
 FOUND MONUMENT
 AS NOTED
 PROPOSED ACCESS ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett
 Robert M. Howett NM PS 19680



Firm No.: TX 1019383B NM 4655451

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NO.	REVISION	DATE
JOB NO.:	LS1508437	
DWG. NO.:	1508437RD	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
 DATE: 8-5-2015
 SURVEYED BY: GB
 DRAWN BY: CMJ
 APPROVED BY: RMH
 SHEET: 1 OF 1



COG Operating LLC

Eddy County, NM (NAD27 NME)

Bone Yard 11 Fee

#12H

OH

Plan: Plan #1 08-12-15

Surface: 170' FSL, 1460' FWL, Sec 2, T20S, R25E, Unit N

PP: 330' FNL, 1653' FWL, Sec 11, T20S, R25E, Unit C

BHL: 330' FNL, 1660' FWL, Sec 11, T20S, R25E, Unit N

Standard Survey Report

12 August, 2015



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services LP
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #12H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site:	Bone Yard 11 Fee	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 08-12-15	Database:	Compass 5000 GCR

Project: Eddy County, NM (NAD27 NME)			
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site: Bone Yard 11 Fee					
Site Position:		Northing:	574,918.70 usft	Latitude:	32° 34' 49.76860 N
From:	Map	Easting:	460,173.20 usft	Longitude:	104° 27' 45.46885 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.07 °

Well	#12H					
Well Position	+N/-S	0.00 usft	Northing:	580,433.80 usft	Latitude:	32° 35' 44.35873 N
	+E/-W	0.00 usft	Easting:	461,347.50 usft	Longitude:	104° 27' 31.82050 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,398.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/4/2015	7.70	60.42	48,431

Design					Plan #1 08-12-15				
Audit Notes:									
Version:		Phase:		PLAN		Tie On Depth:		0.00	
Vertical Section:		Depth From (TVD)		+N/-S		+E/-W		Direction	
		(usft)		(usft)		(usft)		(°)	
		0.00		0.00		0.00		178.26	

Survey Tool Program		Date	8/12/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	7,829.46	Plan #1 08-12-15 (OH)	PHX+MWD+HDGM	PHX+MWD+HDGM	

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge 3°/100' Build									
1,300.00	3.00	90.00	1,299.95	0.00	2.62	0.08	3.00	3.00	0.00
1,400.00	6.00	90.00	1,399.63	0.00	10.46	0.32	3.00	3.00	0.00
1,500.00	9.00	90.00	1,498.77	0.00	23.51	0.72	3.00	3.00	0.00
Begin 9° Inc. Hold									
1,600.00	9.00	90.00	1,597.54	0.00	39.16	1.19	0.00	0.00	0.00
1,700.00	9.00	90.00	1,696.31	0.00	54.80	1.67	0.00	0.00	0.00
1,800.00	9.00	90.00	1,795.07	0.00	70.44	2.14	0.00	0.00	0.00



Phoenix Technology Services LP
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #12H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site:	Bone Yard 11 Fee	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #108-12-15	Database:	Compass 5000 GCR

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,900.00	9.00	90.00	1,893.84	0.00	86.09	2.62	0.00	0.00	0.00
1,937.50	9.00	90.00	1,930.88	0.00	91.95	2.80	0.00	0.00	0.00
Begin 3°/100' Drop									
2,000.00	7.13	90.00	1,992.76	0.00	100.72	3.06	3.00	-3.00	0.00
2,100.00	4.12	90.00	2,092.27	0.00	110.52	3.36	3.00	-3.00	0.00
2,200.00	1.12	90.00	2,192.15	0.00	115.10	3.50	3.00	-3.00	0.00
2,237.50	0.00	0.00	2,229.65	0.00	115.47	3.51	3.00	-3.00	-240.00
Begin Vertical Hold									
2,300.00	0.00	0.00	2,292.15	0.00	115.47	3.51	0.00	0.00	0.00
2,337.50	0.00	0.00	2,329.65	0.00	115.47	3.51	0.00	0.00	0.00
KOP Start 11°/100' Build									
2,400.00	6.88	171.50	2,392.00	-3.70	116.02	7.23	11.00	11.00	274.40
2,500.00	17.88	171.50	2,489.53	-24.87	119.18	28.48	11.00	11.00	0.00
2,600.00	28.88	171.50	2,581.18	-64.05	125.04	67.82	11.00	11.00	0.00
2,700.00	39.88	171.50	2,663.59	-119.80	133.37	123.80	11.00	11.00	0.00
2,800.00	50.88	171.50	2,733.73	-190.08	143.88	194.37	11.00	11.00	0.00
2,900.00	61.88	171.50	2,789.02	-272.31	156.16	276.93	11.00	11.00	0.00
3,000.00	72.88	171.50	2,827.43	-363.46	169.79	368.46	11.00	11.00	0.00
3,100.00	83.88	171.50	2,847.55	-460.18	184.24	465.58	11.00	11.00	0.00
3,142.39	88.54	171.50	2,850.35	-502.00	190.49	507.57	11.00	11.00	0.00
PP (Bone Yard 11 Fee #12H)									
3,150.83	89.47	171.50	2,850.50	-510.36	191.74	515.95	11.00	11.00	0.00
TL 2855' TVD @ 0° VZ 90.5° Inc									
3,160.23	90.50	171.50	2,850.50	-519.65	193.13	525.28	11.00	11.00	0.00
LLP Begin 3°/100' Turn									
3,200.00	90.50	172.69	2,850.15	-559.04	198.60	564.82	3.00	0.00	3.00
3,300.00	90.50	175.69	2,849.28	-658.51	208.71	664.55	3.00	0.00	3.00
3,400.00	90.50	178.69	2,848.40	-758.37	213.61	764.52	3.00	0.00	3.00
3,468.10	90.50	180.74	2,847.81	-826.47	213.95	832.59	3.00	0.00	3.00
Begin 90.5° Inc Hold 180.74° Azm									
3,500.00	90.50	180.74	2,847.53	-858.36	213.54	864.46	0.00	0.00	0.00
3,600.00	90.50	180.74	2,846.66	-958.35	212.25	964.36	0.00	0.00	0.00
3,700.00	90.50	180.74	2,845.78	-1,058.34	210.97	1,064.27	0.00	0.00	0.00
3,800.00	90.50	180.74	2,844.91	-1,158.33	209.68	1,164.17	0.00	0.00	0.00
3,900.00	90.50	180.74	2,844.04	-1,258.31	208.40	1,264.07	0.00	0.00	0.00
4,000.00	90.50	180.74	2,843.17	-1,358.30	207.11	1,363.97	0.00	0.00	0.00
4,100.00	90.50	180.74	2,842.29	-1,458.29	205.83	1,463.88	0.00	0.00	0.00
4,200.00	90.50	180.74	2,841.42	-1,558.28	204.54	1,563.78	0.00	0.00	0.00
4,300.00	90.50	180.74	2,840.55	-1,658.27	203.26	1,663.68	0.00	0.00	0.00
4,400.00	90.50	180.74	2,839.68	-1,758.25	201.97	1,763.58	0.00	0.00	0.00
4,500.00	90.50	180.74	2,838.80	-1,858.24	200.69	1,863.49	0.00	0.00	0.00
4,600.00	90.50	180.74	2,837.93	-1,958.23	199.40	1,963.39	0.00	0.00	0.00
4,700.00	90.50	180.74	2,837.06	-2,058.22	198.12	2,063.29	0.00	0.00	0.00
4,800.00	90.50	180.74	2,836.19	-2,158.21	196.83	2,163.19	0.00	0.00	0.00



Phoenix Technology Services LP
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #12H
Project:	Eddy County NM (NAD27/NME)	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site:	Bone Yard #11 Fee	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1-08-12-15	Database:	Compass 5000 GCR

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,900.00	90.50	180.74	2,835.31	-2,258.19	195.55	2,263.10	0.00	0.00	0.00
5,000.00	90.50	180.74	2,834.44	-2,358.18	194.26	2,363.00	0.00	0.00	0.00
5,100.00	90.50	180.74	2,833.57	-2,458.17	192.98	2,462.90	0.00	0.00	0.00
5,200.00	90.50	180.74	2,832.69	-2,558.16	191.69	2,562.81	0.00	0.00	0.00
5,300.00	90.50	180.74	2,831.82	-2,658.15	190.41	2,662.71	0.00	0.00	0.00
5,400.00	90.50	180.74	2,830.95	-2,758.13	189.12	2,762.61	0.00	0.00	0.00
5,500.00	90.50	180.74	2,830.08	-2,858.12	187.84	2,862.51	0.00	0.00	0.00
5,600.00	90.50	180.74	2,829.20	-2,958.11	186.55	2,962.42	0.00	0.00	0.00
5,700.00	90.50	180.74	2,828.33	-3,058.10	185.27	3,062.32	0.00	0.00	0.00
5,800.00	90.50	180.74	2,827.46	-3,158.09	183.98	3,162.22	0.00	0.00	0.00
5,900.00	90.50	180.74	2,826.59	-3,258.07	182.70	3,262.12	0.00	0.00	0.00
6,000.00	90.50	180.74	2,825.71	-3,358.06	181.41	3,362.03	0.00	0.00	0.00
6,100.00	90.50	180.74	2,824.84	-3,458.05	180.13	3,461.93	0.00	0.00	0.00
6,200.00	90.50	180.74	2,823.97	-3,558.04	178.84	3,561.83	0.00	0.00	0.00
6,300.00	90.50	180.74	2,823.10	-3,658.03	177.55	3,661.73	0.00	0.00	0.00
6,400.00	90.50	180.74	2,822.22	-3,758.01	176.27	3,761.64	0.00	0.00	0.00
6,500.00	90.50	180.74	2,821.35	-3,858.00	174.98	3,861.54	0.00	0.00	0.00
6,600.00	90.50	180.74	2,820.48	-3,957.99	173.70	3,961.44	0.00	0.00	0.00
6,700.00	90.50	180.74	2,819.61	-4,057.98	172.41	4,061.34	0.00	0.00	0.00
6,800.00	90.50	180.74	2,818.73	-4,157.97	171.13	4,161.25	0.00	0.00	0.00
6,900.00	90.50	180.74	2,817.86	-4,257.95	169.84	4,261.15	0.00	0.00	0.00
7,000.00	90.50	180.74	2,816.99	-4,357.94	168.56	4,361.05	0.00	0.00	0.00
7,100.00	90.50	180.74	2,816.12	-4,457.93	167.27	4,460.95	0.00	0.00	0.00
7,200.00	90.50	180.74	2,815.24	-4,557.92	165.99	4,560.86	0.00	0.00	0.00
7,300.00	90.50	180.74	2,814.37	-4,657.90	164.70	4,660.76	0.00	0.00	0.00
7,400.00	90.50	180.74	2,813.50	-4,757.89	163.42	4,760.66	0.00	0.00	0.00
7,500.00	90.50	180.74	2,812.62	-4,857.88	162.13	4,860.56	0.00	0.00	0.00
7,600.00	90.50	180.74	2,811.75	-4,957.87	160.85	4,960.47	0.00	0.00	0.00
7,700.00	90.50	180.74	2,810.88	-5,057.86	159.56	5,060.37	0.00	0.00	0.00
7,800.00	90.50	180.74	2,810.01	-5,157.84	158.28	5,160.27	0.00	0.00	0.00
7,829.46	90.50	180.74	2,809.75	-5,187.30	157.90	5,189.70	0.00	0.00	0.00
TD at 7829.46' MD - BHL (Bone Yard #11 Fee #12H)									



Phoenix Technology Services LP
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #12H
Project:	Eddy County, NM (NAD27, NME)	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site:	Bone Yard 11 Fee	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1-08-12-15	Database:	Compass 5000 GCR

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
BHL(Bone Yard 11 Fee #	-90.40	0.07	2,809.75	-5,187.30	157.90	575,246.50	461,505.40	32° 34' 53.02819 N	104° 27' 29.90353 W
- plan hits target center									
- Point									
PP(Bone Yard 11 Fee #1	0.00	0.00	2,850.35	-502.00	190.49	579,931.80	461,537.99	32° 35' 39.39328 N	104° 27' 29.58690 W
- plan hits target center									
- Point									

Casing Points				
Measured Depth	Vertical Depth	Name		
(usft)	(usft)		Casing Diameter	Hole Diameter
			(")	(")
1,100.00	1,100.00	8 5/8"	8-5/8	11

Formations				
Measured Depth	Vertical Depth	Name		
(usft)	(usft)		Lithology	Dip Direction
				(°)
3,150.83	2,850.50	TL, 2855' TVD @ 0 VZ, 90.5° Inc		-0.50 178.26

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		
(usft)	(usft)	+N/-S	+E/-W	Comment
		(usft)	(usft)	
1200	1200	0	0	Begin Nudge 3°/100' Build
1500	1499	0	24	Begin 9° Inc Hold
1938	1931	0	92	Begin 3°/100' Drop
2238	2230	0	115	Begin Vertical Hold
2338	2330	0	115	KOP, Start 11°/100' Build
3160	2851	-520	193	LP, Begin 3°/100' Turn
3468	2848	-826	214	Begin 90.5° Inc Hold, 180.74° Azm
7829	2810	-5187	158	TD at 7829.46' MD

Checked By: _____ Approved By: _____ Date: _____



Project: Eddy County, NM (NAD27 NME)
Site: Bone Yard 11 Fee
Well: #12H
Wellbore: OH
Design: Plan #1 08-12-15
Rig: Silver Oak 3



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: 0.07°
Magnetic North: 7.77°
Magnetic Field
Strength: 48430.96 nT
Dip Angle: 60.42°
Date: 8/4/2015
Model: HDGM

WELL DETAILS

+N-S	+E-W	Northing	Ground Level: Easting	Latitude	Longitude
0.00	0.00	580433.80	461347.50	32° 35' 44.35873 N	104° 27' 31.82050 W

SECTION DETAILS

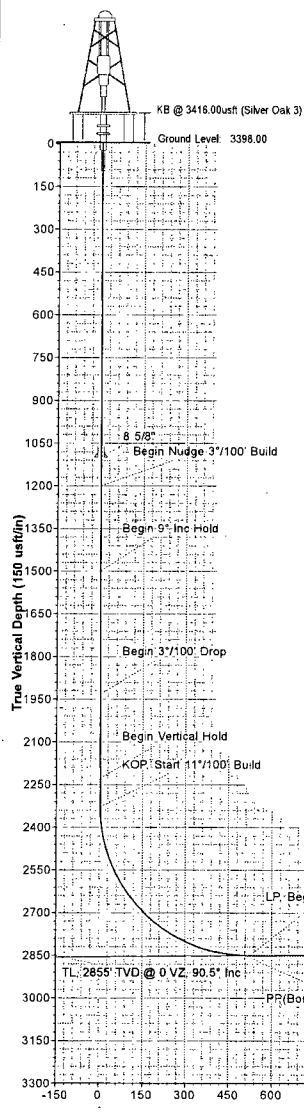
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VFace	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	0.00	Begin Nudge 3°/100' Build
3	1500.00	9.00	90.00	1498.77	0.00	23.51	3.00	90.00	0.72		Begin 9° Inc Hold
4	1937.50	9.00	90.00	1930.88	0.00	91.95	0.00	0.00	2.80		Begin 3°/100' Drop
5	2237.50	0.00	0.00	2229.65	0.00	115.47	3.00	-180.00	3.51		Begin Vertical Hold
6	2337.50	0.00	0.00	2329.85	0.00	115.47	0.00	0.00	3.51		KOP Start 11°/100' Build
7	3160.23	90.50	171.50	2850.50	-518.65	193.13	11.00	171.50	525.28		LP, Begin 3°/100' Turn
8	3488.10	90.50	180.74	2847.81	-826.46	213.95	3.00	89.98	832.59		Begin 90.5° Inc Hold, 180.74° Azm
9	7829.46	90.50	180.74	2809.75	-5187.30	157.90	0.00	0.00	5189.70		BHL(Bone Yard 11 Fee #12H) TD at 7829.46' MD

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
BHL(Bone Yard 11 Fee #12H)	2809.75	-5187.30	157.90	575246.50	461505.40	32° 34' 53.02819 N	104° 27' 29.90353 W	Point
- plan hits target center								
PP(Bone Yard 11 Fee #12H)	2850.35	-502.00	190.49	578931.80	461537.99	32° 35' 39.39327 N	104° 27' 29.58690 W	Point
- plan hits target center								

LEGEND

— Plan #1 08-12-15



Vertical Section at 178.26° (150 usf/in)

